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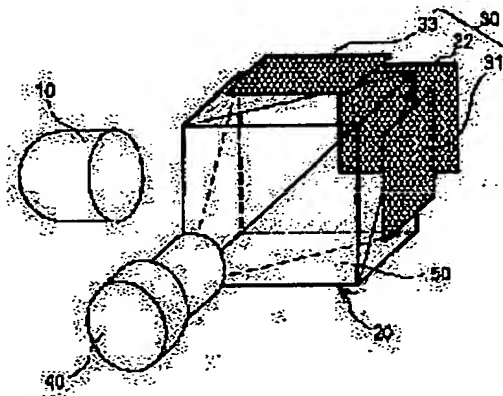
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## (54) COLOR SEPARATION-COMBINED ELEMENT AND LIQUID CRYSTAL PROJECTOR USING THE SAME

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a color separation-synthesis element which is far more small-sized than the conventional one and a liquid crystal projector using the same.

**SOLUTION:** The color separation-combination element is formed into a cubic shape, equipped with a light incident surface 21 placed opposite to a light source part 10, three light incident/emitting surfaces 23, 24, 25, respectively placed opposite to a panel out of liquid crystal panels 31, 32, 33, a light-emitting surface 22 placed opposite to a projection optical system 40 and another surface 26, and is provided, in its inside, with a means for separating the combining colors 50, which separates incident light from the light source part 10 into color components of three primary colors, emits them respectively from the corresponding light-incident and emitting surfaces 23, 24, 25, further combines the color components of the three primary colors, of which the polarization directions are rotated 90°, and reflected with, the liquid crystal panels



31, 32, 33 respectively placed opposite to the light incident and emitting surfaces 23, 24, 25, and emits it from the light-emitting surface 22 to the projection optical system 40.

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